

In one embodiment, AV/C controller 450 communicates commands and other information to TV 430 and VCR 440 (as well as other devices) via a wireless connection (e.g., infrared or radio frequency signals); however, it is appreciated that AV/C controller 450 can also communicate with TV 430 and VCR 440 (as well as other devices) via an IEEE 1394 cable (e.g., network bus 230). In one embodiment, monitor 431 is used to display menus or messages to the user, and to also display the user's selections as they are made by the user. In another embodiment, a display device (not shown) may be incorporated into AV/C controller 450.

In one embodiment, in accordance with the present invention, AV/C controller 450 has an input-select button 451. In another embodiment, in accordance with the present invention, AV/C controller 450 also has an output-select button 452.

In accordance with the present invention, AV/C controller 450 is used to select a source device to provide input to a sink device such as TV 430. Specifically, input-select button 451 is used to make the input selection. AV/C controller 450 is also used to select which output plug will be used by a source device such as VCR 440. Specifically, output-select button 452 is used to make the output selection.

In the present embodiment, using a round-robin approach, a user uses AV/C controller 450 (specifically, input-select button 451) to scroll through a listing (e.g., a menu) of target devices (e.g., TV 430, VCR 440 and target devices 446a and 446b). Using input-select button 451, the user can select TV 430 and then can scroll through another listing (menu) that lists the input plugs on TV 430 (e.g., V1, V2 and serial bus input plug 410). From this latter menu, the user uses input-select button 451 to select a network connection (e.g., serial bus input plug 410).

The user can then use AV/C controller 450 (specifically, output-select button 452) to scroll through a listing (menu) of target devices that can be connected to TV 430 (e.g., VCR 440 and target devices 446a and 446b). The user then selects one of the devices, such as VCR 440, using output-select button 452. The user is provided with another listing (menu) that lists the output plugs on VCR 440 (e.g., V3, V4 and serial bus output plug 420). Using the output-select button 452, the user can select a network connection (e.g., serial bus output plug 420). In response to the user's input, VCR 440 is connected to TV 430 over network bus 230. That is, responsive to manipulation of output-select button 452, a channel is assigned between TV 430 and VCR 440 and bandwidth is allocated in accordance with the AV/C protocol. It is appreciated that a user can first use output-select button 452, then input-select button 451, to have a channel assigned and bandwidth allocated as described above.

In accordance with the present invention, information such as the input and output plug information is not processed and stored on AV/C controller 450. Instead, AV/C controller 450 queries the target devices and reads information from the target devices that is provided in response to the query. Specifically, each target device has connection state variables identifying the connectable input and output plugs that are present on the device. In the present embodiment, for TV 430, the possible state variables are V1, V2, and serial bus input plug 410. For VCR 440, the possible state variables are V3, V4, and serial bus output plug 420. It is appreciated that a greater number of state variables can be used, and that different names (including user-friendly names) may be used.

In summary, AV/C controller 450 queries the state variables to identify the connectable input and output plugs, and displays this information to the user. Using a round-robin approach, AV/C controller 450 scrolls through possible connections. The functionality of input-select button 451 is expanded so that when a user uses that button, AV/C controller 450 initiates a query of target devices to identify devices that can be selected as a source device. An output-select button is added to AV/C controller 450 so that when a user uses that button, AV/C controller 450 initiates a query to identify which output plug to use on a source device. The target devices describe themselves to AV/C controller 450, and the controller uses this information to display possible choices to the